CLAIMS

1. A method for extracting data from a scanned image of an array composed of pixels having one or more associated intensity values, the method comprising:

computing row and column vectors by horizontal and vertical projection of pixel intensity values;

computing corner-feature-image positions from the horizontal and vertical pixel-value projections;

constructing a feature coordinate system using the computed corner-feature-image positions to index feature images in the scanned image of the array; and

using the coordinate system to index and extract data from feature images within the scanned image of the array.

2. A method for extracting data from a scanned image of an array composed of pixels having one or more associated intensity values, the method comprising:

indexing images of features within the scanned image of the array by constructing an initial feature coordinate system;

rotating the feature coordinate system over a range of rotational angles in order to precisely align the feature coordinate system with feature images within the scanned image of the array; and

using the coordinate system to index and extract data from feature images within the scanned image of the array.

3. A method for extracting data from a scanned image of an array composed of pixels having one or more associated intensity values, the method comprising:

indexing images of features within the scanned image of the array by constructing an initial feature coordinate system and rotating the feature coordinate

system over a range of rotational angles in order to precisely align the feature coordinate system with feature images within the scanned image of the array;

extracting data from indexed feature images in order to identify strong features with relatively large signal-to-noise ratios;

precisely determining the coordinates of the images of the identified strong features;

using a linear regression technique to refine the feature coordinate system based on the precisely determined coordinates of the images of the identified strong features; and

using the refined feature coordinate system to index and extract data from feature images within the scanned image of the array.

4. A method for extracting data from a scanned image of an array composed of pixels having one or more associated intensity values, the method comprising:

indexing images of features within the scanned image of the array by constructing and refining a feature coordinate system;

for each indexed feature image, selecting a set of pixels within the feature image from which to compute one or more feature intensity signals; and

extracting data from the selected set of pixels for each feature image within the scanned image of the array.

5. A method for extracting data from a scanned image of an array composed of pixels having one or more associated intensity values, the method comprising:

indexing images of features within the scanned image of the array by constructing and refining a feature coordinate system;

for each indexed feature image, selecting a set of pixels within the feature image from which to compute one or more feature intensity signals; and

extracting two or more background-subtracted and normalized feature signal intensities from the selected set of pixels for each feature image within the scanned image of the array.